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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,637	09/29/2003	Cheon Soo Kim	P69148US0	1375

7590 03/24/2005

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EXAMINER

ROSE, KIESHA L

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

4-A

Office Action Summary	Application No.	Applicant(s)	
	10/671,637	KIM ET AL.	
	Examiner	Art Unit	
	Kiesha L. Rose	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8 and 9 is/are rejected.
- 7) ☒ Claim(s) 6-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/29/03, 6/16/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the filing of the application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 1) in view of Crabill (U.S. Patent 4,841,253).

Applicant's Prior Art (Fig. 1) discloses a stacked variable inductor by stacking 3 metal layers (111-113) on a semiconductor substrate using CMOS technology comprising 1 to N inductors continuously connected in serial wherein each of the inductors is formed on N ($N < M$) metal layers that are different each, first and second ports (ports 1 and 2) each connected to the highest inductor and to the lowest inductor among the 1 to N inductors, where N is 3, which is equal to or above 2 and below 4 and with turns of at least 2 of the 3 inductors and gradually decreases or increases from the lower position of the substrate to the upper position. Applicant's Prior Art discloses all the limitations except for a MOSFET connected to the inductor. Whereas Crabill discloses a stacked inductor (Fig. 2) that contains inductors (LD1 and L2) and a first and MOSFET (150) wherein one terminal of the MOSFET is connected to one of the first

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and second ports (LD1) and the other port is connected to the adjacent terminals connected in serial between the inductors and the inductors are serially connected through ON/OFF of MOSFET where the signal for multi band including bands of 1.5GHz-6GHz.

Claims 1-5 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 1) in view of Yamauchi et al. (U.S. Publication 2002/0064923).

Applicant's Prior Art (Fig. 1) discloses a stacked variable inductor by stacking 3 metal layers (111-113) on a semiconductor substrate using CMOS technology comprising 1 to N inductors continuously connected in serial wherein each of the inductors is formed on N ($N < M$) metal layers that are different each, first and second ports (ports 1 and 2) each connected to the highest inductor and to the lowest inductor among the 1 to N inductors, where N is 3, which is equal to or above 2 and below 4 and with turns of at least 2 of the 3 inductors and gradually decreases or increases from the lower position of the substrate to the upper position. Applicant's Prior Art discloses all the limitations except for a MOSFET connected to the inductor. Whereas Yamauchi discloses a stacked inductor (Fig. 1b) that contains inductors (32b) and a first and second MOSFET (14a/b) wherein one terminal of the MOSFET is connected to one of the first and second ports and the other port is connected to the adjacent terminals connected in serial between the inductors and the inductors are serially connected through ON/OFF of MOSFET where the signal for multi band including bands of 1.5GHz-6GHz.

Allowable Subject Matter

Claims 6-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiesha L. Rose whose telephone number is 571-272-1844. The examiner can normally be reached on M-F 8:30-6:00 off 2nd Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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KLR


AMIR ZARABIAN
SUPERVISOR, PATENT EXAMINER
TECHNOLOGY CENTER 2822